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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,962	04/17/2000	Akihiro Yamashita	MAT-7947US	1642

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
2674	21

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/550,962

Applicant(s)

YAMASHITA, AKIHIRO

Examiner

Abbas I Abdulsalam

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-15 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-15 and 18-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-15 and 18-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasa et al. (USPN 5978403) in view of Kawanami et al. (USPN 6333599) and Sarrasin (USPN 5600343).

Regarding claims 1, 5, 9, 18 and 21, Iwasa teaches the arrangement of LED and displaying devices. See col. 11, lines 21-27. Iwasa teaches a matrix wiring of an anode wire (2), and a cathode wire (3) arranged in multiple numbers. See col. 7, lines 23-30. Iwasa teaches the arrangement of light emitting laser with multiple anode wiring and the application of voltage V2 to the cathode wires (n8 to n14) as well as the connection of current flowing to the anode wiring. See Fig 7, Fig 11 and col. 10, lines 1-6 and col. 13, lines 30-33. Furthermore, Iwasa teaches the time dependence of the current in simulated matrixing along with pattern of current flowing with respect to time elapsed. See col. 14, lines 59-67, and Fig 15. Iwasa also teaches "m.times.n" laser array required for charging and discharging the capacitance of wiring in different cases. See Fig 10. Moreover, Iwasa teaches a photosensitive material drum (40) and a charger for charging the photosensitive material drum. See col. 15, lines 35-47 and Fig 16. However, Iwasa does not teach a mechanism for discharging the stored charge from electro luminescence elements.

Art Unit: 2674

Sarrasin on the other hand teaches a multiplexed matrix display system in which discharging of the row takes place with respect to its selection time, and discloses a discharge time corresponding to the time necessary for the outflow of all charges stored in the previously addressed row. See col. 2, lines 55-67, and col. 7, lines 48-53

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Iwasa's display system to adapt Sarrasin's discharging technique. One would have been motivated in view of the suggestion in Sarrasin that discharging stored charge is equivalent to the desired discharging mechanism. The use of discharging and discharging time helps function a multiplexed matrix display system as taught by Sarrasin

Iwasa does not disclose setting a discharge time, R_t before light emission of the EL elements to a time R_t , determining discharge time, T_x before light emission of EL elements in order to obtain luminance L_p of the EL elements such that $L_p \geq 0.9 \times L_e$, $T_x \leq R_t$, where L_e is a luminance of light emitted by the EL elements storing substantially no electrical charge.

Kawanami on the other hand teaches the measured time variation of the discharge current and manipulation of discharge time T_d in terms of minimum and maximum discharge currents as shown in Fig. 7(A). Kawanami also discloses improving the efficiency of luminescence by making a time at which the maximum discharge current to appear close to the time at which the maximum efficiency of luminance appears. See col. 8, lines 33-52, and Fig 7(A-B).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Iwasa's display system to adapt Kawanami's time variation of a discharge current and time variation of the efficiency of luminance as represented in the plots, Fig. 7A and

Art Unit: 2674

7B respectively. One would have been motivated in view of the suggestion in Kawanami that manipulatable discharge time, T_d would provide the desired discharge time, R_t and the desired luminance level. The use of time variation of both discharge time and luminance helps function a plasma display system more effectively as taught by Kawanami.

Regarding claims 2 and 19, Iwasa teaches a matrix wiring of an anode wire (2), and a cathode wire (3) arranged in multiple numbers. See col. 7, lines 23-30.

Regarding claims 4, 6-14, 20 and 22-30, Kawanami teaches the measured time variation of the discharge current and manipulation of discharge time T_d in terms of minimum and maximum discharge currents as shown in Fig. 7(A). Kawanami also discloses improving the efficiency of luminescence by making a time at which the maximum discharge current to appear close to the time at which the maximum efficiency of luminance appears. See col. 8, lines 33-52, and Fig 7(A-B). Further, Kawanami teaches the discharge current as a function of the discharge time, T_d . See the abstract. It would have been obvious that the variable discharge time T_d , can be used to satisfy the desired equations and inequalities.

Regarding claim 15, Kawanami teaches an operation of a drive circuit in one TV-field period of time for making a single picture on a PDP. See Fig. 6(A)

Conclusion

Art Unit: 2674

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference

U.S. Pat. No. 5,854,540 to Matsumoto et al.

U.S. Pat. No. 5,095,248 to Sato

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abduselam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to crystal park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Application/Control Number: 09/550,962

Page 6

Art Unit: 2674

Abbas Abdulsalam

Examiner

Art Unit 2674

November 28, 2003

A handwritten signature in black ink, appearing to read 'Richard Muerpe', is positioned above a printed title block.

RICHARD MURPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000